

10. A host cell transfected with the recombinant DNA expression vector as claimed in claim **9**, wherein the host cell comprises a prokaryotic cell, a yeast, an insect cell or a mammalian cell.

11. The host cell as claimed in claim **10**, wherein the prokaryotic cell is an *Escherichia coli*; the mammalian cell is a HEK293 cell, a CHO cell or a NS0 cell.

12. The anti-PCSK9 monoclonal antibody as claimed in claim **1**, wherein the heavy chain constant region of the anti-PCSK9 monoclonal antibody comprises IgG1, IgG2, IgG3 or IgG4; the light chain constant region comprises C_κ or C_λ.

13. The anti-PCSK9 monoclonal antibody as claimed in claim **12**, wherein the heavy chain constant region comprises IgG4 or IgG2; the light chain constant region comprises C_κ.

14. (canceled)

15. The anti-PCSK9 monoclonal antibody as claimed in claim **1**, wherein the monoclonal antibody comprises a whole-length antibody or a fragment of the anti-PCSK9 monoclonal antibody, and the fragment comprises one or a combination of Fab, Fab', F(ab')₂, Fv and ScFv.

16. A detection reagent or a kit comprising the light chain or the heavy chain of the anti-PCSK9 monoclonal antibody as claimed claim **1**.

17. An antibody comprising the light chain or the heavy chain of the anti-PCSK9 monoclonal antibody as claimed in claim **1**, for eliminating, inhibiting or reducing activity of the PCSK9 and alleviating, reliving, inhibiting or preventing diseases; the diseases comprise dyslipidemia, cardiovascular and cerebrovascular diseases and thrombotic occlusive diseases.

18. Use of the anti-PCSK9 monoclonal antibody claimed in claim **1** in chimeric antigen T cell immunotherapy.

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